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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,289	09/26/2003	Toru Kasai	031199	6504

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EXAMINER

BHAT, NINA NMN

ART UNIT PAPER NUMBER

1764

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,289

Applicant(s)

KASAI ET AL.

Examiner

N. Bhat

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1,3 and are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a sub critical range and predetermined length of time of approximately 30 minutes at a pressure between 1.5 and 17 mPa and a water temperature between 200 and 350°C, does not reasonably provide enablement for the broad recitation of a predetermined time and sub critical range as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to provide a teaching what is meant by predetermined time and sub critical range except for the time being approximately 30 minutes and the pressure in the range of 1.5 to 17 MPa and a temperature between 200-350°C , the claim as presently drafted is unduly broad and the time, temperature and pressure read on a range which has been neither contemplated nor disclosed.

2. Claims 1 and 4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of aromatic polyamide lacks positive antecedence. The recitation of "dehalogenation" lacks positive antecedence.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1764

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saleh et al.

Saleh et al. teach a method of hydrolyzing hydrolyzable polymers by contacting the hydrolyzable polymers with water at a temperature from about 200°C to about 310 °C c and a pressure generated by the mixed components of the system at the corresponding temperature (autogeneous pressure) The hydrolyzable polymers include PET, polyamides, polycarbonates, etc.[Note Column 1, lines 45-57. The temperatures, which Saleh et al. teach, include using supercritical water for the hydrolysis reaction. The reaction is carried out at autogeneous pressure generated by the mixed components results in a pressure of 225.45 psi at 200°C for liquid water alone and will be from 225.45-about 2397.79psi at 350°C or up to the critical temperature of 374°C which is within the range as taught by applicant. Saleh et al. further teach that "...it is within the skill of the ordinarily skilled in the art to determined the pressure and the pressure of liquid water in the above temperature range may be determined by reference to stand test....". Saleh et al. teach that the process of hydrolyzing hydrolyzable polymers has utility in the recycling of plastics by providing a simple

Art Unit: 1764

method for differentiating by reactive separation of the hydrolyzable polymers from which starting materials can be recovered from the non-hydrolyzable polymers such as polyolefin's which can then be used in other conversion processes or re-used.[Note Column 2, lines 4-65]

However, Saleh et al. does not specifically recite that the process is applicable for recycling a nonmetallic honeycomb panel, which is crushed.

It would have been obvious from the teachings of Saleh et al. to provide a method of recycling nonmetallic honeycomb panels because Saleh et al. teaches a method of using liquid water for hydrolyzing polymers such as polyamides at temperatures and pressures which are within the range as claimed by applicant. The honeycomb panels as described by applicant are mainly made of up aromatic polyamides, phenolic resin, glass fiber and fluorine based films. Treating the honeycomb panel in a hydrolysis reactor such as has been taught by Saleh et al. for the wherein generic plastic recycling has been taught would have been an obvious substitution. Therefore, substituting the honeycomb panels for the recycled plastic is a permissible substitution. Therefore, the non-hydrolyzable and hydrolyzable polymers of the honeycomb is treated with water temperature of between 200°C-374°C at an autogeneous pressure of 225.45 -2397.79 psi wherein the hydrolyzable polymers such as aromatic polyamides or polyamides are hydrolyzed into its constituents and the non-hydrolyzed polymers, resins or glass fibers would be separated from the hydrolyzable polymers. This process for recycling plastics has been specifically taught and suggested by Saleh et al. Saleh et al. further teaches that the starting materials or

Art Unit: 1764

plastic material to be recycled includes hydrolyzable and non hydrolyzable polymers which can be present in any form that can be accommodated by the reaction vessel, and includes powders, crystals, small chips etc. It is maintained that given the teachings of Saleh et al. one having ordinary skill in the art, would have been able to apply this method in recycling nonmetallic honeycomb panels which are made up of hydrolyzable polymers, non-hydrolyzable polymers and glass fibers, which have been crushed or to be in any form which can be accommodated in the reactor of Saleh et al. in order to recycle and separate the hydrolyzable polymers such as aromatic polyamides by water hydrolysis reactions at temperatures which are sub critical as claimed by applicant and supercritical as claimed by applicant resulting in hydrolyzing aromatic polyamides which decomposes the aromatic polyamides into to its carboxylic acid form and an amine, and further separating the glass fiber. The process as claimed has been fully taught and suggested by Saleh et al. and to use the process of Saleh et al. for recycling a non-metallic honeycomb panel which includes aromatic polyamides, fluorine based films, phenolic resins and glass fibers using a hydrolysis reaction at sub critical and supercritical conditions has been fully taught and suggested thus rendering applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Booiji et al. teach a process for recovering and recycling polyamide from carpet waste. Miess et al. teach a process for preparing aromatic polyamides of high hydrolysis resistance with controlled water content.

Art Unit: 1764

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


N. Bhat
Primary Examiner
Art Unit 1764